

**REMARKS**

Claims 12-16 and 21 are presently pending. Claim 12 is amended herein to address formalities raised by the Office. Basis for the amendments may be found throughout the specification and claims as-filed, including at page 8 of the specification which provides basis for the use of a salt of tenatoprazole, including the sodium, potassium, magnesium, and calcium salts. Thus, no new matter is presently herein.

**Objections to the Specification and Claims**

The specification and claims are amended herein to attend to the formalities cited by the Examiner, including the use of American English spelling. A substitute specification is provided herewith addressing these issues of spelling.

**Rejections under 35 U.S.C. § 112, second paragraph**

Claim 21 stands rejected under 35 U.S.C. § 112, second paragraph, for the recitation of a salt of sodium, potassium, magnesium or calcium, as the Office states that the claim lacks antecedent basis in base claim 12. Claim 12 is amended to recite a salt of tenatoprazole. Thus, this rejection is obviated.

**Obviousness-Type Double Patenting**

Claims 12-16 and 21 stand rejected under the judicially created doctrine of obviousness type double patenting over claims 7 and 9 of U.S. Patent No. 7,402,593. Claims 12-16 and 21 stand rejected under the judicially created doctrine of obviousness type double patenting over claims 8, 9, and 12-14 of U.S. Patent No. 7,034,038. Claims 12-16 and 21 stand rejected under the judicially created doctrine

of obviousness type double patenting over claims 14-20 of co-pending U.S. Patent Application No. 11/344,212.

As noted by the Office, Applicants choose to wait for indication of allowable subject matter to address these rejections, and will consider filing terminal disclaimer(s) if appropriate. Applicants do note that the filing of a terminal disclaimer is not to be construed as an admission of the propriety of the rejection on obvious double patenting. *Quad Environmental Technologies Corp. v. Union Sanitary District*, 946 F.2d 870, 20 USPQ2d 1392 (Fed. Cir. 1991).

Rejections under 35 U.S.C. § 112, first paragraph

Claims 12-16 and 21 stand rejected under 35 U.S.C. § 112, first paragraph. The Office asserts that the specification fails to provide support for the efficacy of the treatment of Barrett's esophagus with tenatoprazole. The Office argues that the usefulness of such treatment would be unexpected. Applicants respectfully traverse.

Applicants submit that it was known in the art prior to the filing of the present application that Barrett's esophagus may be a complication of GERD. In support, Applicants attach herewith the following three articles, dated prior to the filing date of the present application.

- Shaheen, N. et al., 2002 Apr 17, JAMA, 287(15):1972-81;
- Shaheen, N. et al., 2002 Apr 17, JAMA, 287(15):1982-6; and
- Campos, GM. Et al., 2001 Nov; Arch Surg., 136(11):1267-73.

These three articles clearly support the assertion that patients suffering from GERD may develop Barrett's esophagus. Thus, it was known in the art that Barrett's esophagus may therefore be a complication of GERD. The present

specification demonstrates that tenatoprazole is effective in the treatment of GERD, as supported, for example, by the data set forth on pages 9-12. Accordingly, Applicants submit that if a PPI is effective for the treatment or prevention of GERD in a patient, then this patient will not develop an esophageal injury, such as Barrett's esophagus. Because tenatoprazole is effective to treat GERD, tenatoprazole is also effective at the prevention of Barrett's esophagus as a complication of GERD. In order to expedite prosecution, Applicants have amended independent claim 12 herein to indicate that tenatoprazole is useful for the prevention of Barrett's esophagus as a complication of GERD. Thus, Applicants submit that the specification, in combination with what was known in the art at the time the application was filed, support the treatment of Barrett's esophagus, as a complication of GERD, with tenatoprazole or a salt thereof.

Rejections under 35 U.S.C. § 103

Claims 12-16 and 21 stand rejected under 35 U.S.C. § 103 as purportedly unpatentable over Barth et al. Applicants respectfully traverse.

As noted, Barth does not disclose the administration of tenatoprazole for the treatment of nocturnal gastroesophageal reflux or Barrett's esophagus. As previously submitted, the first instance in which tenatoprazole is mentioned in the chain of Barth applications is in the International PCT application filed on May 16, 2003, though the Office maintains that in Provisional Application No. 60/404,154, filed August 19, 2002, that any proton pump inhibitor is encompassed in the teaching.

Thus, the disclosure of Barth which predates the filing of the present application in no way teach any advantages or uses of tenatoprazole over another PPI. Applicants further

submit as support the following references supporting the argument that tenatoprazole is more effective in the treatment of GERD than previous PPIs.

Armstrong D., Current Opinion in Pharmacology, 2005, 5, 589-595 relates to GERD and discloses that tenatoprazole leads to more prolonged acid suppression than previously known PPIs. As noted in the paragraph bringing pages 589 and 590, more than 50% of individuals suffering from GERD do not have esophageal injury (non-erosive reflux disease). However, for the other individuals, GERD is associated with esophageal erosions, ulceration, structures or Barrett's epithelium. This article further highlights deficiencies in current therapy, and states that:

due to its longer plasma half-life (about 5-7h, significantly longer than the plasma half-life the 1.5 h plasma half-life or other PPIs) tenatoprazole produces significantly better control of overall and nocturnal gastric acidity than esomeprazole at the same dose (40 mg daily), as well as a persistent effect on gastric acidity three days after cessation of drug administration. These data suggest that it may be possible to address the need for a more prolonged acid suppression effect in patients who have persistent acid-related GERD symptoms despite standard PPI therapy, although there are as yet no clinical data to support this hypothesis. (see first paragraph of page 592).

Brooks D. Cash, Medscape Gastroenterology (June 20, 2007) focuses on a PPIs efficacy study and notably states Hunt et al. compared the efficacy of 3 daily doses of the sodium salt of the S enantiomer of tenatoprazole, a PPI with a prolonged plasma half-life, versus that of 40 mg of esomeprazole given daily. Brooks found that the S enantiomer of tenatoprazole provides significantly greater and more prolonged dose-dependant acid suppression than esomeprazole and that nocturnal acid suppression was also greater and more prolonged after 5 days of administration.

Hunt R.H. et al., American Journal of Gastroenterology, 2005, 100, 1949-1956 corresponds to the above Brooks references. Hunt relates the study comparing

the inhibitory effect of the administration of tenatoprazole 40 mg once daily with administration of esomeprazole 40 mg once daily on intragastric acidity. Hunt concludes that tenatoprazole 10 mg daily provides a prolonged duration of acid suppression and a shorter nocturnal acid breakthrough in healthy volunteers, even after stopping the drug. Thus, tenatoprazole may provide greater clinical efficacy for patients in whom a one daily PPI is ineffective.

As supported by the above three articles, tenatoprazole is more effective than, for example, esomeprazole in the treatment of nocturnal GERD. The Office stated that “[o]ne skilled in the art would have expected an improvement in nocturnal heartburn subsequent to the administration of any proton pump inhibitor”. Applicants submit that this is incorrect, because tenatoprazole shows an improved efficacy over other PPIs in the treatment of nocturnal GERD.

Thus, the cited reference fails to disclose or suggest the present claims, and fails to provide any advantages or reasons to seek to use tenatoprazole for the treatment of the claimed conditions. Applicants request that these rejections be withdrawn.


### **CONCLUSION**

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket # 104006.B130120).

Respectfully submitted,

December 7, 2009

  
\_\_\_\_\_  
Deborah H. Yellin  
Registration No. 45,904

CROWELL & MORING LLP  
Intellectual Property Group  
P.O. Box 14300  
Washington, DC 20044-4300  
Telephone No.: (202) 624-2500  
Facsimile No.: (202) 628-8844